

## More Waves:

- Refraction:

- Bending of waves when they go from one medium to another
- Each time wave changes medium, wave is deflected.
- Wavelength stays the same, but velocity and frequency change
- Index of Refraction  $\rightarrow$  measure of how much wave will deflect
- We can use a prism and white light to show separation of colors

- Wave Interactions:

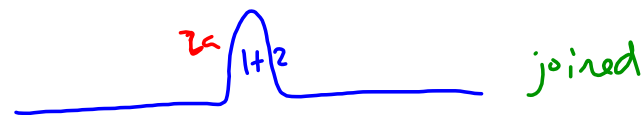
- When waves interact with other waves, interference happens.

- Two types:

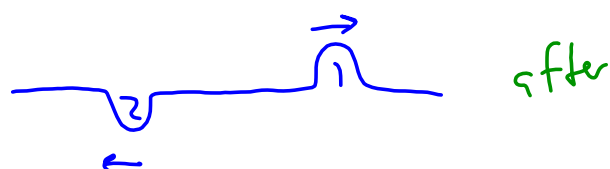
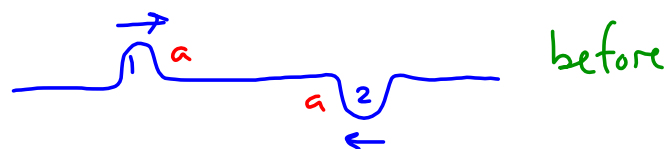
1. Constructive  $\rightarrow$  waves join together to create a larger wave

2. Destructive  $\rightarrow$  waves cancel each other out

- Constructive Interference Picture:



- Destructive Interference Pictures:



- Lenses:
  - Optical device that is symmetrical and transmits and refracts light
  - Two types:
    1. Converging
    2. Diverging
  - We either use a ...
    - Simple lens → reading glasses, magnifying glass, your retina
    - Compound lens → telescope, microscope, camera

- Electromagnetic Spectrum (EMS):
  - This type of wave does NOT need a medium to travel!
  - In free space, wave travels at  $3E8$  m/s